Appl. No. 10/010,086
Amdt. dated June 2, 2005
Preliminary Amendment

PATENT

Amendments to the Claims:

·This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1.-29. (canceled)

30. (currently amended) A computer-implemented informatics system for data structuring via data structuring objects executed by a computer, wherein a data structuring object includes a presentation interface, program code executable by a computer to structure data, program code executable by a computer to query data using a graphical interface, wherein the querying is done on raw data, the informatics system comprising:

an object handler for supporting the data structuring objects;

a generator for generating a data structuring object to be associated with the raw data;

at least one description data structure within the data structuring object, wherein a

description data structure describes the raw data associated with the data structuring

object;

at least one subset vector within the data structuring object, wherein a subset vector

describes a proper subset of the associated raw data and wherein at least one subset

vector is user-defined, thereby allowing for structuring data in the context of raw data

without requiring restructuring of the data or programming; and

an object translation engine for generating definition tables usable for translating data

structuring objects into a presentation form.

31. (previously presented) The informatics system of claim 30, wherein the at least one subset vector comprises a direct pointer to addressed content, further comprising a binary pointer structure to link addressed content to the definition tables, to provide a binary-encoded look-up source for information of relevance to each data structuring object.

<u>PATENT</u>

32. (previously presented) The informatics system of claim 30, wherein the object translation engine comprises look-up tables organized by user, to allow for custom definition tables for a plurality of users.

33. (canceled)

34. (previously presented) The informatics system of claim 30, wherein at least one subset vector is a multidimensional vector.

35. (previously presented) The informatics system of claim 30, wherein the at least one subset vector is represented by a matrix according to a matrix structure descriptor that maps data subsets defined within each of the data structuring objects to data within the associated raw data.

36. (previously presented) The informatics system of claim 35, wherein the data subsets within data structuring objects include extracted meta-data, annotated meta-data, detected content element subsets or defined content workspace subsets.

37. (previously presented) The informatics system of claim 30, further comprising logic to support a plurality of subset views simultaneously for multiple users according to one or more of user preference, level, group and environment definition settings.

38. (previously presented) The informatics system of claim 37, further comprising:
    means for enabling content access; and
    means for routing data.

39. (previously presented) The informatics system of claim 30, further comprising:
    program code to query data using a graphical interface; and
    program code for interacting with other entities of the informatics system according to
        information provided by the subset vectors and content description workspaces.

40. (previously presented) The informatics system of claim 30, wherein each of
the data structuring objects further comprises:

program code for graphical presentation;

program code for element detection;

program code for workspace subset detection and definition; and

program code for association of meta-data and the raw data associated with the data
structuring object.

41. (previously presented) The informatics system of claim 30, wherein each of
the data structuring objects further comprises:

program code for controlling access privileges to the data structuring object and its
associated raw data, wherein access privileges are represented by tuples comprising
unique data structuring object identification, user identification, and a content subset
definition.

42. (previously presented) The informatics system of claim 30, wherein each of
the data structuring objects further comprises program code for processing data from a plurality
of distinct data sources and maintaining a log of processing steps, thereby allowing monitoring
and roll back of processing steps.

43. (previously presented) A system as in claim 30, wherein each of the data
structuring objects further comprises program code for extraction, normalization and analysis of
data content and relationships among the data, including:

program code for reading raw data associated with the data structuring object;

program code for translating information content of the raw data into a common data format;

program code for presenting the information content into the common data format;

program code for normalizing information from a plurality of raw data sources to a
compatible format;

a master query component enabling user and rule-driven queries to external databases and to
information contained within a pool of data structuring objects.

44. (previously presented) The informatics system of claim 43, wherein the information being normalized comprises extracted meta-data, annotated meta-data, detected content element subsets or defined content workspace subsets.

45. (previously presented) The informatics system of claim 43, further comprising:

    program code for generating reports as data content for data structuring objects;

    program code for report auditing of data structuring object state and processing history;

    program code for providing selected security for distribution, by granting or denying access to all or subsets of data content according to user permission determined by one or more off user identity, environment variables, group association, and level management designation;

    program code for linking data structuring objects to each other according to their content definitions and positions within the ontology for providing query optimization, weighted clustering and relevancy ranking;

    program code for linking, using vectors, source data as paths for subsequent queries;

    a data link definition interface enabling selection of information presented by one or several databases and/or data structuring objects and definition of relationships between selected information as well as outputs and processes to be triggered according to the status of selected information; and

    program code for monitoring and synchronizing data objects according to their status and context.

46. (previously presented) The informatics system of claim 45, further comprising:

    a status management component comprising binary triggered listening flags set on each object and logic for communicating with a centralized state management engine; and

    logic for activating communication between objects and applications on the operating system level to pipeline and replay multi-step processes defined within a data structuring object applications view.

47. (previously presented) The informatics system of claim 43, wherein the master query component is configured to search for data objects satisfying a search criteria and to identify data objects interconnected to those data objects satisfying the search criteria.

48. (previously presented) The informatics system of claim 43, wherein the master query component is configured to search multiple database fields residing in one or more similar or heterogeneous relational databases using meta-fields created by selecting and mapping fields presented by the relational databases through a visual interface.

49. (previously presented) The informatics system of claim 43, wherein the master query component is configured to search multiple database fields residing in one or more similar or heterogeneous web databases using meta-fields created by selecting and mapping fields presented by the web databases through a visual interface.

50. (previously presented) The informatics system of claim 43, further comprising a knowledge extraction engine to perform statistical analysis of queries and to assist in data mining.

51. (previously presented) The informatics system of claim 43, further comprising a distributed learning engine to validate and rank search results and to utilize report information to optimize query efficiency.

52. (previously presented) The informatics system of claim 43, further comprising a neural network for creating weighted links between objects, for use in optimizing searching and analysis of interconnected data objects.

53. (currently amended) A computer-implemented method of organizing and searching data on an informatics server, comprising:

instantiating a data object on the informatics server for each data item to be organized and searched, the data object including at least one pointer to a source of the data item;

for each data object, providing a graphical user interface on a user computer system to

    receive object descriptors from a user to define at least a presentation layer for the data

    item;

in response to a user search query, accessing the source of the data item using at least the

    pointer;

accessing <u>proper</u> subsets of data pointed to by at least one subset vector and corresponding

    to the data item in a raw data format;

translating data into an intermediate data format from the raw data format;

performing a search for data attributes and object descriptors of the data item using the

    intermediate data format; and

presenting search results for the search query using the presentation layer on the user

    computer system.

54. (currently amended) The method of claim 53, wherein accessing content subsets of data comprises traversing pointers to data in the ~~native~~-raw data format, the pointers comprising one or more of a URL, a meta-data link, an SQL expression, a file path or a vector.

55. (previously presented) The method of claim 53, further comprising:
determining interconnected data objects having direct information interchange of at least one

    component of a multi-dimensional data vector; and

expanding the search query to analyze the data associated with the data objects determined

    to the interconnected.

56. (previously presented) The method of claim 53, further comprising using boundary protocols comprising program code and administrative information for controlling access to sets of data structuring objects.

57. (previously presented) The method of claim 53, further comprising generating a first search result limiting the search to data objects having object descriptors defined by the user in the search query.

Appl. No. 10/010,086
Amdt. dated June 2, 2005
Preliminary Amendment

PATENT

58. (previously presented) The method of claim 53, further comprising knowledge extraction for statistical analysis of queries.

59. (previously presented) The method of claim 53, further comprising using a neural network enabling definition and weighting of linkages for optimizing analysis of interconnected data objects.

60 - 65. (canceled)